

A Note on Supposed Homonyms of *Octopus australis* Hoyle, 1885, with Comments on *Octopus campbelli* Smith, 1902 (Cephalopoda: Octopodinae)

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ABSTRACT

"*Octopus australis* (Massy, 1916)" and "*O. australis* (Benham, 1942)", both from New Zealand, are determined not to be homonyms of *O. australis* Hoyle, 1885, from Australia, as previously suggested. Examination of new material attributable to *Octopus campbelli* Smith, 1902, from New Zealand, supports the taxonomic distinction between *O. campbelli* and *O. australis*. Massy's, Benham's and Dell's material is probably referable to *O. campbelli*.

Key words: *Octopus australis*; *Octopus campbelli*; Octopodinae.

Tait (1982) redescribed and reviewed the taxonomic position of *Octopus australis* Hoyle, 1885, originally described from Port Jackson, New South Wales, Australia. In his review of related taxa 'described' from New Zealand, Tait (1982:20) indicated that two nominal taxa, "*Polypus australis* Massy [not Massey], 1916" and "*Robsonella australis* Benham, 1942," are junior homonyms of *Octopus australis* Hoyle, following the placement of *Polypus* and *Robsonella* into the synonymy of *Octopus* s. s. by Robson (1929) and Pickford (1955), respectively. Tait (1982:20) concluded that these two species require renaming. Massy's (1916) account, however, clearly indicated that she did not describe *Polypus australis* as a new species, but actually attributed her specimens to Hoyle's *australis*, and indeed cited Hoyle as the author. Therefore, *Polypus australis* is simply a new combination proposed by Massy, with Hoyle retained as the author of the species [see ICZN, 1985: Art. 50(c)(ii)]. The same is true for *Robsonella australis*, a new combination, not a new species, proposed by Benham (1942) based on his examination of new material.

Tait (1982:19) suggested, and I agree, that based on characters of the hectocotylus, it is highly unlikely that *Octopus australis* from Australia and *O. campbelli* Smith, 1902, from Campbell Island, New Zealand are conspecific, as proposed by Robson (1929:115). Tait further stated (pg. 20) that "all the New Zealand species previously considered to be synonyms of *O. australis* Hoyle

appear to be separate and distinct". The available data, however, do not support this assertion. The type of *O. campbelli* and the specimens attributed to Hoyle's *australis* by Massy (1916), Benham (1942), and Dell (1952) are all characterized by W-shaped funnel organs. Robson (1929:190) gave the value 8.5 as the ligula length index (LLI) of the type of *O. campbelli*. Benham's specimens, remeasured by Tait, have a LLI of 6 to 10. Massy's specimen has a LLI of 10.9; however, the proximal starting point along the hectocotylus used to obtain this measurement is unclear. Dell's specimens have a LLI of 5-7. These overlapping data sets certainly cannot be used to distinguish among taxa. In comparison, Tait (1982) reported the LLI for *O. australis* as 12-18. Massy's (1916) figure of the radula showed a symmetrical, pentacuspoid rachidian. Dell (1952) reported that the rachidian tooth is asymmetrical (however, he gave the formula as "A₄", probably an error due to the confusing situation created by Robson's original designation of the letter A for symmetrical rachidian teeth, see Robson, 1925). This variation of the radula is within the range observed from new material of *O. campbelli* examined here (see below). Therefore, based on these accounts there appears to be no clear taxonomic separation among New Zealand specimens.

For comparison to published accounts, I examined six specimens of *Octopus campbelli* (4 males, ML 22-30 mm, all with spermatophores; 2 mature females, ML 25-27 mm) from Portobello, New Zealand, deposited in the collections of the Invertebrate Museum, Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, Florida (UMML 31.2447). The range of LLI is 6.5-11.1 (mean = 8.48). Two inconsistencies exist between the original description of the type of *O. campbelli* and the specimens I have examined. The Portobello specimens have gill lamellae counts of 7-8 (including terminal lamella). Smith (1902) gave no data on the gills from the holotype of *O. campbelli*. Robson (1929:190) stated that the gill count of the holotype is "probably ten", based on his reexamination. Robson's 1929 monograph contains certain factual inconsistencies (Voss, 1973). Indeed, Tait

(1982:20) found that Robson, despite his assertion that he had examined the radula from one of the syntypes of *O. australis*, could not have done so because the buccal mass had not been removed from either specimen at the time Tait acquired them for examination. Therefore, Robson's gill lamellae data, given with some degree of uncertainty, should be discounted.

The second discrepancy concerns the greatly enlarged and elevated suckers (seventh pair only) on the lateral arm pairs of the type of *O. campbelli* (SnI ~ 8.5; SeI ~ 14.3). Three Portobello male specimens have moderately enlarged suckers (SnI 8.2–10.4; SeI 10.7–12.2) which are not distinctly elevated. In these specimens about three pairs of suckers, beginning with the fifth pair, are enlarged on the lateral arm pairs. Specially enlarged suckers are not mentioned specifically in the accounts of Massy, Benham, or Dell. While this disparity is curious, it could be the result of differences in reproductive maturity. In light of the other numerous similarities in morphology, dermal texture, and absolute size, I do not consider this difference to be substantiative.

The radulae of three of the Portobello specimens were examined and showed considerable variation. The rachidian tooth is strongly asymmetrical in one specimen, weakly asymmetrical in the second, and varies from symmetrical in one region to asymmetrical along another region in the third example. Intraspecific (including intra-radular) variation is known to occur in Octopoda (Robson, 1925, 1929; Adam, 1933, 1941; Voss, 1973; Toll, 1981, unpublished); therefore, differences in the symmetry of the radula can be unreliable in distinguishing among related species.

Based on examination of all pertinent accounts, I find that no homonyms of *Octopus australis* Hoyle, 1885 exist; therefore, no renaming needs to be take place. *Octopus australis* Hoyle and *Octopus campbelli* Smith, 1902 appear to be distinct allopatric taxa, most easily differentiated on the basis of hectocotylus and penial apparatus morphology, dermal texture and absolute size. Furthermore, the specimens described by Massy, Benham and Dell from New Zealand are consistent with the characters of *O. campbelli* and I consider them to be referable to it.

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